

CLAIMS

Please cancel claims 1-8 and 24-35 without prejudice.

Claims 1-8 (Canceled)

9. (Original) A wireless network system facilitating the location of a wireless node, comprising

a plurality of access elements for wireless communication with at least one remote client element and for communication with a central control element;

wherein the access elements are each operative to

establish and maintain, in connection with a central control element, wireless connections with remote client elements;

detect the strength of received signals;

append a signal strength value to frames received from wireless nodes;
and

transmit received frames to a central control element;

wherein at least one of the access elements comprises a plurality of directional antennas, and is further operative to:

select one from the plurality of the directional antennas to receive the frames in received signals;

append an identifier corresponding to the selected antenna to the frames received from the wireless nodes;

at least one central control element for supervising the access elements, wherein the central control element is operative to

manage wireless connections between the access elements and corresponding remote client elements, and

store signal strength data appended to frames transmitted by the plurality of access elements in association with wireless node identifiers; and

a wireless node location module operative to

compute the estimated location of a wireless node based on the antennas identified by at least one of the access elements, and the signal strength values appended to the frames transmitted by the wireless node as detected by the access elements.

10. (Original) The system of claim 9 wherein the wireless node location module resides in a network management system.

11. (Original) The system of claim 9 wherein the wireless node location module resides in the central control element.

12. (Original) The system of claim 9 wherein the wireless node location module maintains a signal strength matrix including values representing the strength of signals detected between the access elements.

13. (Original) The system of claim 9 wherein the peak gains of the plurality of directional antennas connected to an access element are offset relative to each other.

14. (Original) The system of claim 9 wherein the at least one access element further comprises

a switch operatively connected to the plurality of directional antennas and operative to switch between the antennas in response to control signals;

a detector operative to detect at least one signal attribute of the signals transduced the antennas; and

an antenna selection module operative, during receipt of the preamble of a wireless frame, to

provide control signals to the switch designating a selected antenna,

evaluate signal attributes provided by the detector,

select an antenna from the plurality of antennas for receiving the signal associated with the wireless frame.

15. (Original) The system of claim 13 wherein the at least one access element further comprises a radio module operatively connected to the switch for receiving signals from one of the plurality of antennas selected by the antenna selection module.

16. (Original) The system of claim 14 wherein the radio module is operative to demodulate the received signals into digital data streams.

17. (Original) The system of claim 15 further comprising a data link control unit operative to process the digital data streams and identify frames from the digital data streams.

18. (Original) The system of claim 9 wherein at least one directional antenna is a patch antenna.

19. (Original) The system of claim 9 wherein at least one directional antenna is a yagi antenna.

20. (Original) The system of claim 9 wherein at least one directional antenna is a parabolic antenna.

21. (Original) The system of claim 9 wherein the plurality of directional antennas are configured to maximize the coverage area provided by the plurality of directional antennas.

22. (Original) The system of claim 9 wherein the plurality of directional antennas are configured to provide radio frequency coverage in all directions.

23. (Original) The system of claim 13 wherein the switch, in a listen mode, is operative to switch between the antennas before a wireless frame is detected.

Claims 24-35 (Canceled)